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ABSTRACT

This document gives examples of seven steps a classroom teacher can take to improve both instructional and learning objectives. This improvement is to be measured by increased student learning. The seven steps are as follows: a) write a simple behavioral objective, b) edit, c) revise objective to make it learner centered, d) clarify, e) evaluate specific criteria, f) pinpoint learning conditions, and validate. Examples and applications are given in the areas of social science and history, English grammar, nursing, and allied health. (Author)

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TITLE

SEVEN STEPS YOU CAN TAKE TO IMPROVE YOUR OBJECTIVES

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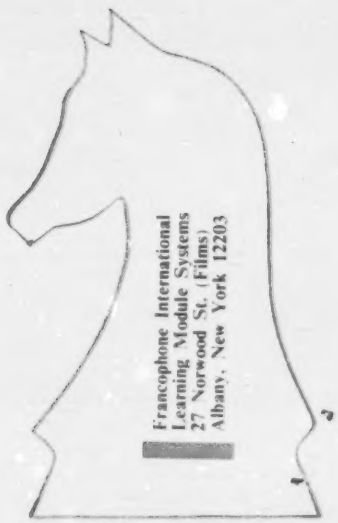

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SEVEN STEPS YOU CAN TAKE TO IMPROVE YOUR OBJECTIVES

Look at the following seven steps. They demonstrate seven easy processes that you can apply to improve your objectives. You are not obligated to apply each step of the following. Merely starting with one or two of them will give you some improvement. You are not obliged to follow the precise order of these steps. The order given below will work with most teachers, but you have no proof that you are like most teachers.

STEP 1: Write a simple behavioral objective.

STEP 2: Edit your verb to make it an action verb.

STEP 3: Revise your objectives to make it learner-centered.

STEP 4: Remove ambiguities to attain operational clarity.

STEP 5: Chop-up the criteria into degrees of excellence.

STEP 6: Pinpoint the conditions under which the learner will perform.

STEP 7: Ask a total stranger for his opinion of your objectives on steps 1 to 6 above.

AN X-RAY OF THE PREVIOUS SEVEN STEPS

STEP	ACTIVITY	EMPHASIS
STEP 1: Start	Write a simple behavioral objective	Start doing something right now.
STEP 2: Visualize	Edit your verb to make it an action verb	Make sure that the beginning learner will be able to photograph your objectives.
STEP 3: Aim	Revise your objectives to make it learner-centered	Make sure that if your objective is photographed, the learner should be the center of attention, not you the teacher.
STEP 4: Specify	Remove ambiguities to attain operational clarity	If someone is going to take photographs, make sure they know exactly what to photograph. You want one photograph, not a series of fuzzy images.
STEP 5: Measure	Chop-up the criteria into degrees of excellence	Think of the criteria as a series of close-up photographs that magnify and clarify exactly what you want.
STEP 6: Evaluate	Pinpoint the conditions under which the learner will perform	Make sure that you remove all unnecessary material from the background of the photograph. Photograph only what is essential to your objectives.
STEP 7: Experiment	Ask a total stranger for his opinion of your objectives of steps 1 to 6 above	It's like showing home movies to strangers. You must not only listen to what they say, but you must watch to see if they are interested or yawning.

AN EXAMPLE OF SAMPLE MECHANICAL ACTIVITIES THAT CAN BE PERFORMED ON A RAW OBJECTIVE (RAWOB)

A HISTORY LESSON

The following seven steps can be applied mechanically. This is not necessarily the best way to do so. The product of mechanically applying these seven steps will be a well-written behavioral objective. It will not necessarily be a measurable objective, a learnable objective, or a teachable objective.

Following mechanically these seven steps will produce a <u>well-written</u> objective. After you have looked at the <u>mechanical application</u> of these seven steps, you might want to go on to the next section entitled, AN EXAMPLE OF SAMPLE ACTIVITIES THAT CAN BE PERFORMED ON A RAW OBJECTIVE.

The contrast between sample activities and sample mechanical activities will be made clear as you continue reading this discussion.

STEP 1: <u>Write</u> a simple behavioral objective.
Example: I want to show my students the exact locations of Ft. Carillon, Ft. William Henry, Ft. Niagara, and Ft. Oswego.

STEP 2: <u>Edit</u> your verb to make it an action verb.
Example: I want to <u>pinpoint on a map</u> the exact geographical and political location of Ft. Carillon, Ft. William Henry, Ft. Niagara, and Ft. Oswego.

STEP 3: <u>Revise</u> your objectives to make it learner-centered.
Example: At the end of the first week of this course, <u>each of my students</u> will pinpoint on a map the exact location of Ft. Carillon, Ft. William Henry, Ft. Niagara, and Ft. Oswego.

STEP 4: Remove ambiguities to attain operational clarity.
Example: Each student will pinpoint on the map in front of the classroom, the exact geographical location of Ft. Carillon, Ft. William Henry, Ft. Niagara, and Ft. Oswego.

Example: After the geographical location is pinpointed, each student will in turn identify each Fort as being a French possession or an English possession during the period around 1755.

STEP 5: Chop-up the criteria into degrees of excellence.
Example: The exact point on the map where the student places the tip of his pointer to indicate the geographical location of each Fort must be within one inch of the exact location. Otherwise, the student receives no credit for his answer. Students whose positioning of the Fort is more than five inches away will receive minus five points for each such error. In cases where the student confuses the geographical location of the two Forts by confusing their names, the student will receive zero points. For each Fort correctly placed within one inch of the exact geographical location, the student will receive five points. For each Fort which is correctly identified as being French or English, the student will receive an additional five points. When the Fort is incorrectly identified as either English or French, the student will receive zero points.

STEP 6: Pinpoint the conditions under which the learner will perform.
Example: The learner will be expected to perform this objective in front of the class, with a pointer in his hand, on a geographical map with all names omitted, and after hearing from the teacher the name of the Fort to be geographically pinpointed. After the student has geographically pinpointed the Fort, he will be asked to identify it as either French or English.

STEP 7: Ask a total stranger for his opinion of your objectives on steps 1 to 6 above.
Example: Rewrite steps 1 to 6 above using the following format which stresses conditions, performance, and criteria.

CONDITIONS: Given: 1. A geographical map from which all names have been removed.

2. A pointer with which to pinpoint the exact geographical location.

3. A position in front of the class.

4. And the stimili of the name of the Fort from the teacher.

PERFORMANCE: The student will pinpoint with the pointer in his hand, the exact location on the map of the Fort cited.

CRITERION: 1. Within one inch of the exact location.

2. Without confusing the names of the Forts.

3. Five points for each location identified within one inch.

4. Minus five points for each location that is erroneously identified with an error greater than five inches.

5. Zero points for names confused.

The way the above objective is stated, the typical stranger will compliment you on your objectivity and clarity. He may not notice any particular originality, creativity, or enthusiasm in your objective but he will admit it is easy to understand.

In all events, going through these seven steps mechanically as stated above is a good logical exercise. It may not have improved your teaching tactics.

Let's look at another way to go through these seven steps that may make you a better teacher.

AN EXAMPLE OF SAMPLE ACTIVITIES THAT CAN BE

PERFORMED ON A RAW OBJECTIVE (RAWOB)

(A HISTORY LESSON) (MUCH MORE HUMANISTIC)

STEP 1: Write a simple behavioral objective

Example: I want each student to identify the four following forts: Ft. Carillon, Ft. William-Henry, Ft. Niagara, and Ft. Oswego

A. This objective is not perfect. It can definitely be improved.

Step 1 will force the teacher to declare at least in general her purpose for a specific lesson.

Step 2 will force the teacher to clarify the meaning of the verb "identify."

Step 3 will force the teacher to make this objective learner-centered.

Step 4 will make it clear to other teachers exactly what is intended in operational terms.

Step 5 will make it clear to herself and to other teachers exactly what this teacher has in mind when it comes time for evaluation of this objective.

Step 6 will force the teacher and her colleagues to more clearly specify classroom conditions, real life conditions, and student reality conditions under which this objective must be attained.

Step 7 will rewrite this raw objective in such a way as to make it acceptable to students, fellow teachers, administrators, educational authorities, and the general public.

B. The mere fact of putting this objective in writing is a step forward. This specific teacher will be able to write this objective on the board, vague as it is, and with this in mind, she will be able to help her students in making history more interesting and more profitable.

C. This placing of a teacher's objective in a format that can be viewed publicly is called the process of writing a raw objective. Student reactions, peer reactions, and administrative reactions will furnish necessary guidelines to make it a better objective. The first step has been taken.

STEP 2: Edit your verb to make it an action verb.

Example: Upon further questioning, it becomes obvious that the verb "identify" used in step 1 needs further clarification.

A. The teacher who wrote step 1 began to explain that she wanted each student to pinpoint on a blank map the four forts listed above. Thus, pinpoint became her KO (knowledge objective). Because the activity she had in mind was basically cognitive and not psychomotor, this was not her PO (performance objective).

B. Further editing and rethinking revealed that the teacher still insisted upon using the verb identify. Thus, with a little bit of editing, identify as a French or English possession in the period around 1755 became her second KO (knowledge objective).

Further rethinking revealed the fact that this KO was really a series of KO's because her course was not confined to the single year 1755.

C. Further development of this objective lead the teacher to enlarge the scope of her goals. She went beyond the KO domain to the PO domain and to the AO (attitude objective) domain. This naturally lead her into step 3, to be described next.

STEP 3: Revise your objective to make it learner-centered.

Example: This involves a verbal change, a performance change, and a motivational change.

A. VERBAL CHANGE:

KO - 1: The student will pinpoint on a blank map the following four forts: Ft. Carillon, Ft. William-Henry, Ft. Niagara, and Ft. Oswego.

KO - 2: The student will identify each fort as either an English possession or a French possession in the period around 1755.

Both KO - 1 and KO - 2 are knowledge objectives, both seem to be very close to the memory recitation level. To go beyond this requires more than a verbal change.

B. PERFORMANCE CHANGE:

The following performances were suggested in order to leave the knowledge domain to enter the performance domain. These sample student activities stress things the students can do in order to learn more than merely to memorize and recite:

PO - 1: Each student will build a fort, a tent, a canoe or some other artifact of the period under consideration according to his or her personal choice.

PO - 2: Each student will illustrate by a drawing, by a piece of handy work, by sewing, by sculpture, by the graphic arts, by the plastics arts, by the theatrical arts, by the costume arts, or by some other manual or artistic activity, an object of daily utility used during the period under study. This manual illustration will provide a certain amount of incubation time whereby each student can go beyond the strictly memorization, recitation, and manual dexterity level in understanding this epoch of history.

C. MOTIVATIONAL CHANGE:

In order to take the student beyond the ability to memorize and recite and beyond the ability to merely manipulate physical objects, a series of attitude objectives has been developed:

AO - 1: The student will imagine while going through objectives KO-1, KO-2, PO-1, and PO-2 one or more of the following dimensions of the period under question:

A. Geographical details

B. Political details

C. Socio-economic realities

D. Typical cultural events

AO - 2: When given specific geographical, political, socio-economic, or a cultural stimuli in the form of a naration or specific piece of factual information, the student will imaginatively recreate a parallel between today's world and the period under study.

STEP 4: Remove ambiguities to attain operational clarity.

Example: Each one of the above objectives, (KO-1, KO-2, PO-1, PO-2, AO-1 and AO-2) needs to be spelled out in more detail. This is not always done in writing. The following shows the thinking process that the teacher must employ in order to remain flexible and responsive to the learning needs of individual students.

This results in the following transformation of specific objectives in detail. It must be underlined again that not all of these details need to be specifically written out:

KO - 1: The student will pinpoint the location of each fort.

A. On a blank map placed on the classroom wall

B. On a blank map reproduced on the back-side of a test questionnaire

C. On a blank map given to each student as part of classroom discussion

KO - 2: Each student will identify each fort as either an English possession or a French possession.

A. By using a blue crayon to mark the French fort

B. By using a red crayon to mark the English fort

PO - 1: Each student will build an article of historical significance; examples will be:

A. A fort

B. An Indian tent

C. An Indian canoe

D. A trapper's canoe

E. A military vessel

F. A house from the region of Quebec

G. A house from the region of Montreal

H. A typical missionary church

I. A historical monument

PO - 2: Each student will illustrate an article of daily utility from this period. The student has a choice of media:

A. Drawing

B. Sewing

C. Sculpture

D. Plastic arts

E. Graphic arts

F. Costuming

G. Any other appropriate manual form of psychomotor expression

AO - 1: The student will imagine the precise details that are associated with KO-1, KO-2, PO-1, and PO-2 along the following four dimensions:

A. Geographical

B. Political

C. Socio-economic

D. Cultural

AO - 2: The student will imaginitively recreate these cultural events when given appropriate stimuli (factual data, historical events, famous quotations, precise information, and other significant material). Acceptable forms of recreation will be:

A. By written composition

B. By oral recitation or dramatization

C. By physical expression (dancing, music, songs, folklore, pantomine, and other activities appealing to the students).

It must be realized that the selection of the above objectives, whether KO-1, KO-2, PO-1, PO-2, AO-1, or AO-2 must be decided by the grade level of the students. What will work in the sixth, seventh, and eighth grades, will not necessarily work in the tenth and eleventh grades.

AO - 3: Students in the tenth and eleventh grade might be permitted to recreate the period by presenting a play of the period, with the language of the period, with the costumes of the period, and with the decor of the period in question. This will facilitate learning on a multi-dimensional scale.

STEP 5: Chop up the criterion into degrees of excellence.

Example: It is not enough to go beyond mere percentages and specify the exact criteria for each objective. Once this has been done, the teacher must be able to come up with a ranked hierarchy of the importance of each objective.

This means that even though the identification objective is the easiest to measure and correct, it is not the most important since it involves only the memory of the learner.

This means that perhaps the objective on imagination and recreation which is very difficult to measure might be the most important since it truly involves all of the learner's intellectual, physical, and value skills.

In other words, avoid the trap of measuring only that which is easy to measure and observe.

GOING BEYOND PERCENTAGES TO OBSERVABLE CRITERIA: Let's look at each of the objectives in order to come up with self-evaluative criteria.

KO - 1: The pinpointing on the map must be geographically accurate. The place where the student marks the "x" to identify the location of a fort must be within a certain scale.

A simple way for the teacher to do this on the small scale map is to come up with a transparent plastic answer key. The teacher will put an "x" on the precise point on the map where the fort is situation. The teacher will draw another circle in red which allows for a certain margin of error. Those students who are within the red circle are given credit. Those students who are outside the red circle are given no credit. In certain cases, teachers may devise a partial credit system.

KO - 2: The identification of the French forts with a blue crayon or the English forts with a red crayon is easy to look at. This merely requires the correct color be in the correct position.

Again this can be corrected by a transparency that can be placed over the students copy of the blank map

It must be realized that this part of the process is distinct from KO-1. If the student has the wrong location and the correct color, the student gets no credit for KO-1, but full credit for KO-2.

PO - 1: As far as the manual building of an article of historical significance, the teacher should have a certain degree of freedom here. He should look for the good things in the work of the student. Egregious errors should be pointed and corrected. Better yet, egregious errors should not be put on public display.

Some of the good things a teacher can look for are:

A. Imagination

B. Identification of the details of the epoch in question

C. An overall good presentation

D. Signs that care were taken

AO-1 and AO-2. The same general material will apply here. It's better to pick out the good things a student has done. Try to catch the student doing something well. This is the best way to foster self-evaluation in the attitude objective domain.

STEP 6: Pinpoint the conditions under which the learner will perform.

Example: It is extremely important for you, like the teacher in question working with her students, to be certain you are unambiguous about the conditions under which the learner will perform.

Let's look at each of the above objectives in detail. Remember it is not always necessary for you to spell out these conditions unless you have something in mind that is not subsumed under the general condition of normal.

KO - 1: Given:

A. A blank map either on the wall or on the back of the questionnaire

B. The name of the fort in question

C. And no other resources to use but his own memory

The student will pinpoint the exact geographical location of the fort in question.

KO - 2: Given:

A. The name of several forts

B. Only memory to rely upon

The student will correctly identify the fort as being English or French.

PO - 1: Given:

A. A number of possible suggestions

B. His or her free choice of what to do

C. Workshops in which to work

D. Appropriate materials

E. The approval of the instructor

The student will build a replica or miniature of an article of historical significance.

PO - 2: Given:

A. Access to an adequate library

B. The necessary historical manuals

C. And all the other means available to the school system for this manual research,

The student will illustrate an article of everyday household utilities pertaining to epoch being studied.

AO - 1: Given:

A. A number of stimuli to creativity

B. The chance to start using his own ideas

C. A definite time framework

The student will try to imagine the day-to-day life of the epoch under study.

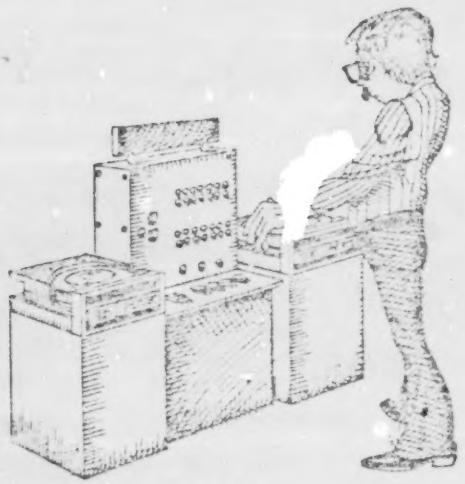
STEP 7: With the above six steps in mind, try to rewrite this objective as suggested in steps 1-6.

Example: Do not try to come up with a giantic amount of writing. The above six steps have shown you the thinking process necessary to make this objective operational for your students.

All of the data details referred to above must be considered by you. This in no way implies that all of these details must be put in writing.

NOW that you have completed all seven steps of the recipe, you can relax.

After all, you are NOW ready for the computer. This process will help you combine your best recipes with those of hundreds of other similar teachers. This will cut down your work while increasing quality and coverage.



Here are a few more examples to make it easier for you.

AN EXAMPLE OF SAMPLE ACTIVITIES THAT CAN BE PERFORMED ON A RAW OBJECTIVE (RAWOB)

(AN EXAMPLE FROM ENGLISH GRAMMAR)

STEP 1: Write a simple behavioral objective.

Example: The trainee will "use" the eight parts of speech with 85% accuracy.

A. This objective is not perfect. It can definitely be improved.

B. The mere fact of putting this objective in writing indicates that a specific teacher has started to make his teaching more measurable, more learnable, and more teachable.

STEP 2: Edit your verb to make it an action verb.

Example: Upon further questioning, the teacher who wrote the above objective in step 1 clarified his meaning of the verb "use."

A. As far as he was concerned, the verb "use" referred operationally to the act of writing. Thus, write became his PO (performance objective).

B. Further editing and rethinking revealed that the ability to write the eight parts of speech correctly is built upon the ability to recognize them. Thus, recognize became his KO (knowledge objective).

C. Putting the above steps together by asking the question, "Why?" forced the teacher to admit that the purpose of recognizing and writing was to put it all together into a business letter or memorandum accurately prepared. Further probing revealed that this office skill is necessary for job advancement. Thus, advance on the job became the AO (attitude objective).

STEP 3: Revise your objective to make it learner-centered.

Example: This involves both a verbal and a motivational change.

A. VERBAL CHANGE: the verbal change results in the following improvements:

1) The trainee will recognize the eight parts of speech

2) The trainee will write sentences that correctly use the eight parts of speech

3) The career minded executive will put together a memorandum or a business letter accurately

B. MOTIVATIONAL CHANGE: Look carefully at step A above. You will notice the gradual changeover from "trainee" to "career executive." By stressing the relationship between a simple grammatical skill and desired progress on a career ladder, educators are able to motivate employees to a greater training proficiency.

STEP 4: Remove ambiguities to attain operational clarity.

Example: No matter how clearly this objective has been stated, its attainment by trainees will depend upon the training resources placed at their disposal.

A. The way the objective is stated, it is obvious that trainees must begin with teacher-made exercises.

B. From the career intent of the objectives, it is equally obvious that trainees must develop their own exercises. This development of appropriate resources while still in training will have a carry-over effect to their later success on the career ladder.

STEP 5: Chop up the criteria into degrees of excellence.

Example: This objective in step 1 has a very ambiguous criteria, namely, 85% accuracy.

This 85% accuracy must be explained in measurable terminology.

The typical busy administrator will be inclined to push off this problem with, "Everyone knows what I mean." If the busy executive pushed further, he will say that he wants each trainee to have, "a working knowledge on a highly simplified basis of the eight parts of speech."

The typical busy executive is neither willing nor able to make the time commitment necessary to come up with adequate test items to measure the attainment of this objective. This means that someone on his staff must come up with a specific number of test items. These test items can be revised, added to, or shortened by the executive. After this process, the executive is able to say that he wants a certain percentage, 70%, 85%, or a 100% of these test items to be correctly answered.

STEP 6: Pinpoint the conditions under which the learner will perform.

Example: You must be able to specify whether the learner is to be evaluated under training conditions or under on the job conditions.

This means that your test items must sample the KO, PO, and AO domains.

This means that your resources must include programmed instruction, semi-programmed instruction (prescription), and A-V media.

STEP 7: With the above in mind, try to rewrite the objective as suggested in steps 1-6.

APPLY EACH STEP BEFORE GOING ON

The following paragraphs will demonstrate advantages that can be acquired by going through the activities on raw objectives slowly and deliberately. It is better to do a thorough job than a rush job.

STEP 1. Write a simple behavioral objective.

Example: Transfer technology from research (bench scale) to the real world (consulting engineering).

This objective states an overall goal. It can be legitimately observed that the verb transfer needs clarification. However, it can also be asserted that it might be good to try to operate with this overall objective before getting down to a number of specifics that may or may not be appropriate.

STEP 2 Edit your verb to make it an action verb.

Example: Walk up to a number of people on your staff. Ask them what they understand by the verb transfer. Here are a few of the answers they will give you:

1) Send information
2) Share information
3) Interpret information gained at one level on another level
4) Analyze information
5) Summarize information in clear concise statements
6) Move information physically from one geographical area to another
7) Translate theory into practice
8) Provide for necessary public relations to make the information and research useable
9) Make the research assessible to the busy administrator
10) Make the research available to the general public

Looking at the above possibilities for the verb transfer is an easy task. Your task is to go beyond this looking process and to make sure that you have rendered each one of these definitions operational.

After these definitions are operational, you must try to get your goals concise enough to be understood by the general public. The general public is not willing to look at a long list of ten items, each of which appears equally important.

STEP 3: Revise your objectives to make it learner-centered.

Example: This means going beyond merely a terminological change. You must make certain that your objectives are learner-centered. This means that your staff and/or student will be able to execute the objectives specified by you without having constant recourse to your decisions and expertise.

One way to do this is to come up with those objectives you consider most important. For example, you might give out the following list of priorities:

1. Interpret laboratory information in such a way that it can be employed by classroom teachers.

2. Analyze and summarize the latest research findings in clear, concise statements that translate theory into practice.

3. Make this research and application procedure assessible to busy administrators.

Step 3 has enabled you to make your program more measurable, more learnable, and more teachable. In other words, you are now thinking of the people who will be doing the work. Your realize that your function is to plan and to utilize your staff to the best of their ability. After your proper planning stage, you are now able to let the staff take over.

This short outline, entitled SEVEN STEPS YOU CAN TAKE TO IMPROVE YOUR OBJECTIVES, is intended to make your job easier and more effective as an Allied Health educator.

"Easier" refers to more enjoyable and more exciting rather than to less effort. There is joy in a good job well done. There is excitement in outdoing one's best previous performance.

"Effective" refers to systematic and relevant rather than to mechanical and dehumanized. In the long run, a systematic approach to teaching and to learning is easier than a "play it by ear, one day at a time" routine. Even in the short term, a relevant learning environment is more exciting and more rewarding than hours idled away in diversions that never approach the fulfillment offered by self-actualizing leisure.

As a nursing educator, you will have to make four translations of this outline to profit from it as an Allied Health educator:

a. Translation one: from social studies to nursing to allied health, (SUBJECT MATTER)
b. Translation two: from high school to associate degree (LEVEL)
c. Translation three: from objectives only to self-paced modules, (FORMAT)
d. Translation four: from my broken English to student-centered idioms (LANGUAGE)

Performing these translations will not be an easy task. However, they will make your teaching easier. They will get your students more excited about learning.

The detail and precision required by these four translations will not be exciting in themselves even if you happen to have a masochistic streak. The excitement will be found in the product: self-paced modules you can use in imaginative and creative ways, once they are developed.

Going through these four translations will habituate you to the "tricks of the trade" that are both easy and exciting.

HOW TO APPLY THIS MATERIAL TO ALLIED HEALTH MODULES

TRANSLATION ONE: These examples are illustrated by social studies, English, and research.

Your applications must be in the subject matter of Nursing and Allied Health.

TRANSLATION TWO: These examples are for younger students: e.g. junior high school and high school.

Your applications must be for the accociate degree community college level.

TRANSLATION THREE: These examples focus mainly on improved objectives.

Your applications must zero in on self-paced learning modules which contain objectives, evaluations, and resources.

TRANSLATION FOUR: These examples are teacher written.

Your applications must be rewritten in terms of learner reactions and increased learning.

The Application of the Alvir Matrix to a Course Outline

A. IF you already have objectives and other materials, gather them together.

B. THEN, classify them according to you curriculum or program of studies.

C. NOW, you are ready to x-ray a specific segment of the material you have.

D. This x-ray is not merely a photograph or a reproduction, it is an analysis.

This analysis can be done in many ways: we suggest using the Alvir Matrix.

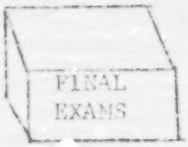
E. There are a variety of approaches available to those who want to use this matrix:

1. DO IT YOURSELF: learn the system and apply it
2. HAVE SOMEONE ELSE DO IT: arrange for a consultation
3. WATCH SOMEONE ELSE DO IT: arrange for a demonstration
4. DIVIDE UP THE WORK: agree upon common needs, let each one tackle a specific need, and pool the results
5. GET IT OFF A COMPUTER TERMINAL: hook up to an inter-active computer system

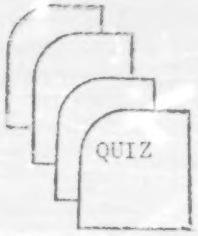
Mechanical Application	Humanistic Application
1. A human machine taking temperatures much like an assembly line worker	1. The same activity but with a human being nurse who may or may not use machinery
2. Emergency room example: "Sign in -- take a seat -- and WAIT, WAIT....."	2. Emergency room example: "Oh, your back is out. Let's try putting you in this back support bed till the doctor comes."
3. Another example: The intern went for a 30 minute coffee break with the visiting specialist in kinesthesia while the child waited with broken glass in his backside.	3. Another example: The nurses that came on emergency room duty at 4 p.m. were introduced to each patient by name and not by malady or bed number.
4. Do some work like robots evaluated more by speed than by client satisfaction?	4. Do some with equal professional skill communicate a more appealing image?
5. Is all of this due to the pressures of the clinic?	5. Are all of these good examples due to inborn personality traits?

A Gather together your materials:

Most likely you have a lot of material on many topics in a lot of different places.

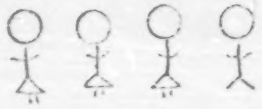


(A file of old final exams in your office.)

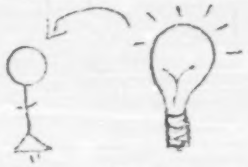


(A pile of daily quizzes scattered here and there.)

(A set of lesson plans in a loose leaf binder.)



(Most of your students have a stack of pass out information pages you developed.)



(In your head, you have many bright ideas that flash on and off like a light bulb.)

(At coffee breaks and gathering, your colleagues have revealed bits and pieces that solve common problems.)

CRITERIA on gathering or discarding:

KE: Gather material that is up-to-date. (KNOWLEDGE EVALUATION)

PE: Save material that is geared to what the practitioner needs. (PERFORMANCE EVALUATION)

AE: Retain material that is relevant. (ATTITUDE EVALUATION)

B Classify your materials according to your curriculum, your program of studies, or your calendar.

CURRICULUM SORT: Large categories

PILE A Place all materials here that refer to TOPIC A	PILE B Place all materials here that refer to TOPIC B	PILE C Place all materials here that refer to TOPIC C
PILE D Place all materials here that refer to TOPIC D	PILE E Place all materials here that refer to TOPIC E	PILE F Place all materials here that refer to TOPIC F

CALENDAR SORT: Time sequence

AUGUST Place here all materials you use during August	SEPTEMBER Place here all materials you use during September	OCTOBER Place here all materials you use during October
NOVEMBER Place here all materials you use during November	DECEMBER Place here all materials you use during December	JANUARY Place here all materials you use during January
FEBRUARY Place here all materials you use during February	MARCH Place here all materials you use during March	APRIL Place here all materials you use during April
MAY Place here all materials you use during May	JUNE Place here all materials you use during June	JULY Place here all materials you use during July

GUIDELINES on classifying and sequencing:

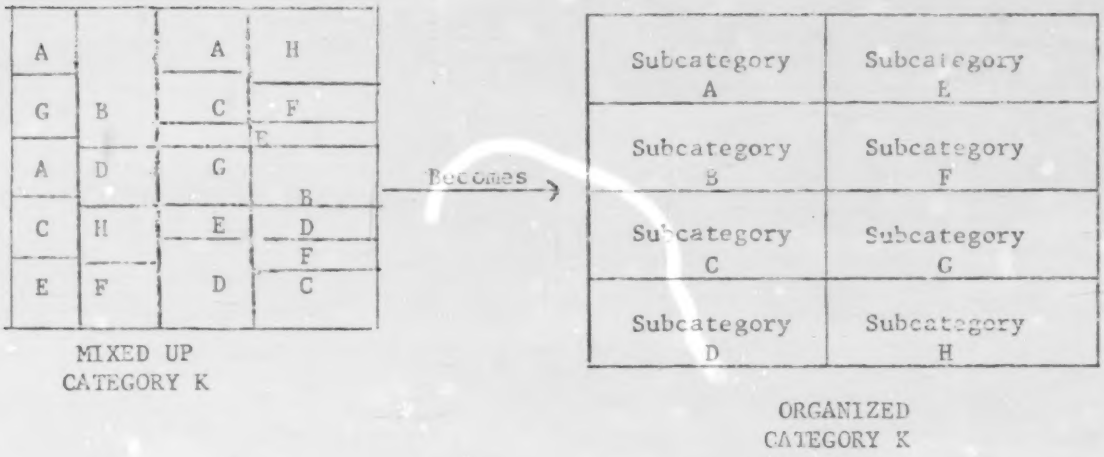
KR: Start with large categories; the smaller subcategories which will be helpful later on will only confuse things now. (KNOWLEDGE RESOURCE)

PR: Utilize existing classification documents (e.g., catalog, course outlines, timetables, administrative directives, legal requirements); this is not the time to dream up the "ideal" course outline; we want to pinpoint the "existing" categories. (PERFORMANCE RESOURCE)

AR: Keep an eye open for "feast" and "famine" categories; this will help you decide in the next step whether to begin in a feast category (where you have an abundance of materials to organize) or in a famine category (where you have almost next to nothing and thus are obliged to beg, borrow, steal, or devise needed materials). (ATTITUDE RESOURCE)

C X-Ray a specific category

Try to visualize the subcategories of a specific category.



MIXED UP CATEGORY K

ORGANIZED CATEGORY K

GOALS for x-raying categories into subcategories.

KO: Visualize subcategories the way you see them; this is not the time to follow the lead of your current text-book or recent periodicals. (KNOWLEDGE OBJECTIVE)

PO: Separate materials the way you use them; if you repeat, then file these materials in both places; if you combine, then file these materials together even if the text has two different chapters. (PERFORMANCE OBJECTIVE)

AO: Tie things together in your mind so you know where you're going; you are now organizing and analyzing; later on, you may write new materials. (ATTITUDE OBJECTIVE)

D. Analyze the materials in one subcategory

Answer the following questions accurately by filling in the boxes.

1. [ ]

1. What is the name of this large category?

2. [ ]

2. What is the name of this smaller category?

3. [ ] pp.

3. How many pages of materials do I have?

4. [ ] OBJ.

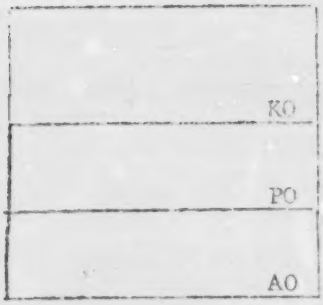
4. Starting with page 1, mark all statements that refer to OBJECTIVES or GOALS with an "O." How many places have you marked an "O"? (Do not confuse places with pages as in the previous question.)

5. [ ] EVAL

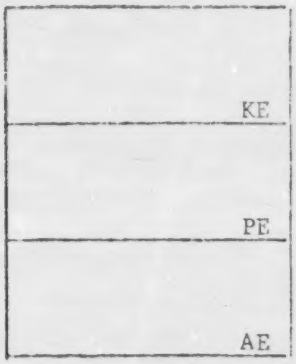
5. Starting with page 1, mark all statements that refer to EVALUATIONS or TEST ITEMS with an "E." How many places have you marked an "E"? (Do not confuse places with pages as in the previous question.)

6. [ ] RES

6. Starting with page 1, mark all statements that refer to RESOURCES or EDUCATIONAL TECHNOLOGY with an "R." How many places have you marked an "R"? (Do not confuse places with pages as in the previous question.)

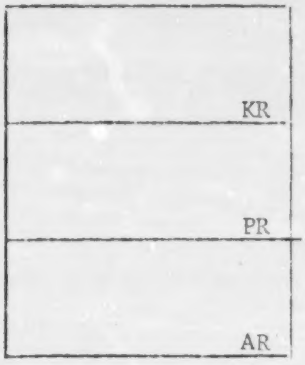
7. 

7. Reread all statements marked with an "O".
   Change "O" to "KO" when the objective is primarily a KNOWLEDGE OBJECTIVE.
   Change "O" to "PO" when the objective is primarily a PERFORMANCE OBJECTIVE.
   Change "O" to "AO" when the objective is primarily a PERFORMANCE OBJECTIVE.
   How many KO, PO, and AO do you have?

8. 

8. Reread all statements marked with an "O".
   Change "E" to "KE" when the evaluation is primarily a KNOWLEDGE EVALUATION
   Change "E" to "PE" when the evaluation is primarily a PERFORMANCE EVALUATION.
   Change "E" to "AE" when the evaluation is primarily an ATTITUDE EVALUATION.

   How many KE, PE, and AE do you have?

9. 

9. Reread all statements marked with an "O".
   Change "R" to "KR" when the resource is primarily a KNOWLEDGE RESOURCE
   Change "R" to "PR" when the resource is primarily a PERFORMANCE RESOURCE.
   Change "R" to "AR" when the resource is primarily an ATTITUDE RESOURCE.

   How many KR, PR, and AR do you have?

10.

KO	PO	AO
KE	PE	AE
KR	PR	AR

10. Summarize the above steps by filling in the matrix on the left with numbers obtained in steps 7, 8, and 9 above.

DO IT YOURSELF: (self-evaluation)

Two teachers analyzed similar materials and arrived at the following x-ray matrices:

KO	PO	AO
45	3	7
KE	PE	AE
105	46	4
KR	PR	AR
3	45	19

The Matrix of Teacher A for one subcategory

KO	PO	AO
3	3	5
KE	PE	AE
150	1	7
KR	PR	AR
44	3	18

The Matrix of Teacher B for the same subcategory

A B 1. Which teacher has more knowledge objectives? (HINT: compare KO components)

A B 2. Which teacher has probably stressed mastery level knowledge objectives (giant steps) more than beginner level objectives (baby steps) in her written materials?

A B 3. If both teachers used the same information sheets for clinical procedures, which one counted the pages rather than each individual subprocedure? (HINT: compare PR components)

A B 4. Which teacher mistakenly assumed that some of her 150 multiple choice final exam questions were "clinical evaluation" items? (HINT: compare KE with PE for both A and B)

A B 5. Which teacher counted each individual book on her bibliography as a separate resource? (HINT: compare KR components)

A B 6. Which teacher is doing a better job teaching attitudes?

NOTE: Matrices give even more insight, help, and analysis when filled with verbs rather than numbers.

Key

Question #	Answer	Comment
1	A	This refers only to written objectives.
2	B	We have no proof of this except for written objectives.
3	B	Each teacher will use the matrix in her own consistent fashion.
4	A	It is very rare that success on a written exam demonstrates clinical competence even when the two are related.
5	B	The matrix offers comparisons more than rigid formulas.
6	?	The matrix cannot do everything.

HAVE SOMEONE ELSE DO IT: (external evaluation)

Look at this matrix written for teacher C by outside evaluator D.

KO Problem solve nursing issues	PO Render nursing care	AO Function ethically as a nurse
KE Succeed on true-false test items Pass multiple choice test items	PE Satisfy one's teacher supervisor Work in the clinic without hurting anyone	AE Receive satisfactory ratings on checklists Avoid egregious errors
KR Take notes in class Read assigned texts	PR Practice the procedures sheet Care for patients in the clinic	AR Discuss Dale Carnegie's How to Win Friends Talk over personal problems

C D 1. Who filled in this matrix? Teacher C or external evaluator D?

KO KE 2. Which component is on the beginner level? KO or KE?

KO KR 3. Which component is on the mastery level? KO or KR?

AO AR 4. Which component is vague and less precise?

Much Little 5. Compare PE and AE. How much difference do you notice between these two examples?

YES NO 6. This sample matrix reveals a discrepancy between alleged mastery level objectives and documentes beginner level evaluation.

YES NO 7. Similarly, mastery level resources are linked with beginner level objectives in this sample matrix.

YES NO 8. The previous seven questions are on the beginner level in the knowledge domain.

Key

Question #	Answer	Comment
1	D	He filled in what he heard and what he observes.
2	KE	In other words, KO and KE don't correlate very well.
3	KO	This is true for the lack of accord between KO and KR.
4	AR	For AO, we have many statements of ethics.
5	Little	They seem to be identical except for choice of synonyms.
6	YES	This discrepancy should be cleared up.
7	NO	It's just the opposite.
8	YES	These simple KE measures are neither PE nor AE in the accepted sense of the terms.